

REMARKS

Claims 259-312 are currently pending. Claims 259-271 and 273-304 stand rejected as being allegedly unpatentable over various cited references either above or in combination. Claim 272 was deemed allowable if written in independent form. Claims 305-312 are new.

Claims 264-265, 272, 279, 281, 289, and 293 have each been re-written in independent form while claims 259-260, 268, 275-276, 282-283, 285-286, 288, 301, and 304, have been amended to more clearly define the claimed invention. For the various reasons explained below, the undersigned submits that not only is claim 272 allowable in its current form but that each of the other pending claims are patentable over the cited art as well.

Oath/Declaration

The Office Action avers that the "oath or declaration is defective because it states 'original, first and sole inventor' and there is more than one inventor." (Emphasis in original.) In response, the inventors have executed a new oath, a copy of which is being filed concurrently with this paper.

Specification

The first paragraph of the specification has been changed to fix the typographical error in the priority claim to U.S. provisional 60/143,626. This correction should obviate the objection raised in the Office Action.

35 U.S.C. 102

Claim 259 and its Dependent Claims

Claim 259 stands rejected as being allegedly anticipated by four different references, Japanese document no. 55-76323, Mandell patent no. 5,108,169, Piosenka patent no. 5,359,444, and Kern patent no. 4,601,545. Because each of these references fail to disclose or suggest an electro-active region "when activated, altering the focal length of a first portion of the lens system above a 180 degree meridian of the lens...the electro-active region positioned to refract less than all of the light passing through the lens," the undersigned submits that claim 259 and all of its dependent claims (nos. 260-263, 266-271, 273-278, 283-288, 290-292, and 294-303) are patentable over each of the references.

The Japanese '323 reference regards Electronic Spectacles and "relates to an electronic eyeglass for presbyopia, more specifically, one that allows its refractive indices for near vision and intermediate vision can [sic] be electrically controlled." Translation at 1. The Japanese '323 claims an "electronic eyeglass characterized in that refractive index of its near vision part can be electronically controlled," and notes that "it is indispensable to provide a small lens whose refractive index can be electrically controlled for near to intermediate distance visions in addition to a main lens." *Id.* Thus, the Japanese '323 seeks to correct presbyopia, a near vision problem that is onset with age. Nowhere in the '323 reference is an electro-active region located above the 180 degree meridian as currently recited in claim 259. Indeed, the Japanese '323 reference teaches away from such a location as it shows the electro-active region well below the 180 degree meridian of the lens in its Fig. 1. Therefore, claim 259 and each of its dependent claims are patentable over this reference.

The Mandell Patent is entitled "Contact Lens Bifocal With Switch," and regards a "bifocal contact lens which contains two optical powers and a structure which serves as a switch to determine which power is operative as the wearer looks alternatively at objects located at various distances." Abstract. Mandell continues that "the switch is designed so as to be triggered by the upper lid as it covers and uncovers various portions of the contact lens when the lens wearer is looking alternatively at objects located at various distances." *Id.* The switch in Mandell uses heat generated by the eyelid of the wearer to change the opacity of liquid crystal in the lens and obscure a portion of the lens. See, for example, col. 5 lines 21-23, which states that the "darkening effect is produced by the conduction of heat from the inner surface of the lid around the gold wire." Mandell, therefore, uses heat carried by a thermally conductive gold wire to block a portion of a contact lens worn by a user and does not disclose or suggest any electro-active region let alone one as recited in claim 259. Based on this distinction alone the claims are patentable over Mandell.

The Piosenka patent is entitled "Auto-Focusing Optical Apparatus" and regards eyeglasses such as lenses "that contain liquid crystal nematic materials with variable refractive indexes...that...are always automatically focused as the operator looks at objects different distances away." Abstract. In an embodiment in Piosenka identified in the Office Action, a lens shaped shell 41 is filled with liquid crystal. See col. 4 at 22. As can be seen in Fig. 8, which is the figure associated with the embodiment, the entire shell 41 is filled with the liquid crystal, thus, all the light passing through the lens will also pass

through the liquid crystal. Conversely, claim 259 now recites an electro-active region “positioned to refract less than all of the light passing through the lens.” For at least this reason the undersigned submits that claim 259 and each of its dependent claims is patentable over Piosenka.

Kern is the last of the four §102 references. It is entitled “Variable Power Lens System” wherein “[i]n one form the lens power may be varied and in another the power maybe selectively fixed in a carrier material.” Abstract. In one embodiment of Kern an optically active lens element responsive to an electric potential for changing the lens power, a means for controlling the electrical potential, and a source for the electrical potential, are contained on a common substrate. *See* col. 2 at 7-15. Nowhere in Kern, however, does it disclose or suggest an electro-active region positioned to refract less than all of the light passing through the lens as recited in claim 259. Rather, in each embodiment of Kern, the electro-active region is positioned to refract all of the light passing through the lens. With regard to Fig. 6c of Kern the undersigned submits that light would not be passing through the edge region of what is described as a contact lens because the edge regions of contact lenses do not transmit light as they are not within the pupil of a wearer’s eye. Accordingly, consistent with the above, claim 259, and each of its dependent claims, is patentable over Kern.

Claim 304

Claim 304 recites an “electro-active region positioned at least partially above a 180 degree median line of the lens, the electro-active region sized to refract less than 50% of the light passing through the lens.” Drawing from the above discussion, the undersigned submits that none of these references disclose or suggest this language and, therefore, like claim 259, claim 304 is also patentable over the cited references.

New Independent Claims

With regard to the claims that have been amended to now be in independent form (nos. 264-265, 272, 279, 281-282, 289, and 293) the undersigned submits that these claims are also patentable over the cited references.

For example, with regard to claim 264 none of the references disclose or suggest an “electro-active region, when activated, altering the focal length of a first portion of the entire lens system to a

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second focal length [with] ... a first outside surface and a second outside surface, the first outside surface being equidistant from the second outside surface.”

Likewise, with regard to claim 265 none of the references disclose or suggest an “electro-active region, when activated, altering the focal length of a first portion of the lens system to a second focal length, the second focal length different from the first focal length, the lens system having two different focal lengths when the electro-active region is activated, the second focal length determined by the distance vision needs of a user, wherein a fixed outer surface of the electro-active region facing away from a wearer, has a radius of curvature proportional to a radius of curvature of the lens adjacent to the electro-active region.”

The Office Action recognizes that claim 272 is patentable over the cited art.

With regard to claims 279, and 281-282 none of the references suggest or disclose a tint effect electro-active region, an anti-reflective coated electro-active region, and an image shifting prismatic zone in the electro-active region, all as recited in the claims.

With regard to claim 289, the undersigned submits that none of the references disclose or suggest a fail safe zone contained in the electro-active region. While some of the references place the electro-active zone on a fixed lens, this fixed lens does not require that the electro-active region contain a fail-safe zone as in the claim.

Finally, with regard to claim 293, the undersigned submits that none of the references suggest or disclose a defined near vision electro-active region above the 180 degree meridian as recited in the claim. While the ‘323 Japanese reference contains a near vision optic, as discussed above, this optic is positioned on the bottom hemisphere of the lens, not above it. Thus, claim 293 is patentable over it.

35 U.S.C. 103

Claims 270-271, 273, 276, and 279-281 stand rejected as being obvious over the combination of Piosenka and the Japanese ‘323 reference. Without addressing the propriety of combining these references and their exact language, the undersigned submits that these claims are patentable over these references for the reasons discussed above for the claim itself or for a claim from which it depends.

New Claims

The undersigned submits that new claims 305-312 are patentable over the cited art because they at least recite: “a lens optic with diffraction patterns etched on a side of the optic adjacent to the electro-active layer, the optic being in optical communication with the electro-active layer,” as in claim 305; “a metallic layer including a pattern of electrodes electrically connected to the electro-active layer,” as in claim 306; “a lens optic in optical communication with the electro-active layer, the electro-active lens providing a reading zone when in an activated state,” as in claim 307; “a lens optical in optical communication with the electro-active layer, the electro-active lens providing a distance correction when in an unactivated state,” as in claim 308; “a lens optic in optical communication with the electro-active layer, the electro-active lens providing an intermediate distance correction when in an activated state,” as in claim 309 or are dependent from allowable independent claims.

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CONCLUSION

Reconsideration and allowance of each of the pending claims is requested.

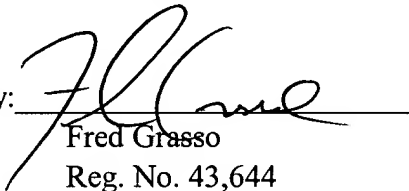
The Examiner is invited to discuss this paper with the undersigned should any questions arise.

The Commissioner is authorized to charge deposit account no. 11-0600 for any applicable fee.

A paper entitled "Version With Markings To Show Changes Made" is attached.

Respectfully submitted,

Dated: August 8, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

--This application claims priority to, is a continuation-in-part of, and incorporates by reference in their entirety, pending provisional applications:

Serial No. 60/142,053 (Attorney Docket No. 10551-28), titled "Electro-Active Spectacles,"; filed 2 July 1999;

Serial No. 60/142~~3~~,626 (Attorney Docket No. 10551-30), titled "Electro-Active Spectacles,"; filed 14 July 1999;

Serial No. 60/147,813 (Attorney Docket No. 10551-41), titled "Electro-Active Refraction, Dispensing, & Eyewear,"; filed 10 August 1999;

Serial No. 60/150,545 (Attorney Docket No. 10551-42), titled "Advanced Electro-Active Spectacles,"; filed 25 August 1999;

Serial No. 60/150,564 (Attorney Docket No. 10551-43), titled "Electro-Active Refraction, Dispensing, & Eyewear,"; filed 2~~5~~ August 1999; and

Serial No. 60/161,363 (Attorney Docket No. 10551-50), titled "Comprehensive Electro-Active Refraction, Dispensing, & Eyewear,"; filed 26 October 1999.--

IN THE CLAIMS:

Please amend claims 255-260, 264-265, 268, 272, 275-276, 279, 282-282, 285-286, 288-289, 293, 301 and 304 to read as follows:

259. (Amended) An optical lens system for refracting light passing through a lens comprising:
a lens having a first focal length; and,
an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the lens system above a 180 degree meridian of the lens to a second focal length, the second focal length different from the first focal length

the electro-active region positioned to refract less than all of the light passing through the lens when the lens system is in use.

260. (Amended) The optical lens system of claim 259 further comprising:

a controller controlling the activation of the electro-active region, the controller programmed to introduce a desired delay in the activation of the electro-active region from the time in which the controller receives a signal to activate the electro-active region.

264. (Amended) An optical lens system comprising:

a lens having a first focal length; and,

an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the entire lens system to a second focal length, the second focal length different from the first focal length,

the lens system having two focal lengths when the electro-active region is activated, The optical lens system of claim 259 wherein the electro-active region has having a first outside surface and a second outside surface, the first outside surface being equidistant from the second outside surface at least one of a fixed outer surface or a fixed inner surface.

265. (Amended) An optical lens system comprising:

a lens having a first focal length; and,

an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the lens system to a second focal length, the second focal length different from the first focal length, the lens system having two different focal lengths when the electro-active region is activated,

the second focal length determined by the distance vision needs of a user,

The optical lens system of claim 259 wherein a fixed outer surface of the electro-active region facing away from a wearer; has a radius of curvature proportional to a radius of curvature of the lens adjacent to the electro-active region.

268. (Amended) The optical lens system of claim 259 wherein the electro-active region is adapted to correct the refractive error of a user to substantially 20/20 distance vision.

272. (Amended) An optical lens system comprising:

a lens having a first focal length; and,

an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the lens system to a second focal length, the second focal length different from the first focal length, ~~The optical lens system of claim 259~~ wherein the lens has two fixed focal lengths.

275. (Amended) The optical lens system of claim 259 wherein the electro-active region is ~~located off-~~
~~center on~~ releasably attached to the lens.

276. (Amended) The optical lens system of claim 259 wherein the lens system ~~electro-active region~~ includes a polymer gel and a liquid crystal.

279. (Amended) An optical lens system comprising:

a lens having a first focal length;

an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the lens system to a second focal length, the second focal length different from the first focal length; and,
~~The optical lens system of claim 259 further comprising:~~

a tint effect electro-active region coupled to the lens.

281. (Amended) An optical lens system comprising:

a lens having a first focal length;

an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the lens system to a second focal length, the second focal length different from the first focal length; and,
~~The optical lens system of claim 259 further comprising:~~

an anti-reflective coated electro-active region coupled to the lens.

282. (Amended) An optical lens system comprising:

a lens having a first focal length; and,

an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the lens system to a second focal length, the second focal length different from the first focal length, ~~The optical lens system of claim 259~~

wherein the lens system includes an image shifting prismatic zone in the electro-active region.

283. (Amended) The optical lens system of claim 259 further comprising:

an eyeglass frame support coupled to the lens.

285. (Amended) The optical lens system of claim 284~~3~~ wherein the ~~support phoropter contains a plurality of fixed focal length lenses is optical equipment.~~

286. (Amended) The optical lens system of claim 285 wherein light passing through the phoropter passes through one of the lenses from the optical equipment is ophthalmic equipment plurality of fixed focal length lenses and the electro-active-region.

288. (Amended) The optical lens system of claim [283] 259 further comprising:

a range finder coupled to [the] a surface of the lens support.

289. (Amended) An optical lens system comprising:

a lens having a first focal length; and,

an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the lens system to a second focal length, the second focal length different from the first focal length ~~The optical lens system of claim 259~~ wherein the electro-active region contains a fail-safe zone usable to view objects in the distance when the electro-active region malfunctions.

293. (Amendment) An optical lens system comprising:

a lens having a first focal length; and,

an electro-active region coupled to the lens,

the electro-active region, when activated, altering the focal length of a first portion of the lens system to a second focal length, the second focal length different from the first focal length, ~~The optical lens system of claim 259~~ wherein the electro-active region is a defined near vision electro-active region located intermittently above a 180 degree meridian of the lens.

301. (Amended) The optical lens system of claim 259 wherein the lens is a semi-finished eyeglass lens blank.

304. (Amended) An optical lens system for refracting light passing through a lens comprising:

a lens having a fixed focal length; and

an electro-active region coupled to the lens,

the coupled lens and electro-active region creating more than one simultaneous focal length for the lens system when the electro-active region is activated

the electro-active region positioned at least partially above a 180 degree meridian line of the lens, the electro-active region sized to refract less than 50% of the light passing through the lens.

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